



8193

Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

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**RBE350A93-3200-20**  
**Job Sheet 189772**



Part No: RBE350A93-3200-20

Job Qty: 1 pcs

Part Name: Main Gear Box/Rotor Brake Retaining Nut Wrench



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 1/30/19

Job Tracking No:

Due Date: 2/26/19

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG RBE350A93-3200-20 REV:D IPP REV A 18.01.23 NEW ISSUE RQ VERIFIED BY DD

Ship Via:

## Bill of Materials

## Job Routing

| Op No | Operation                   | Qty   | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off                      |
|-------|-----------------------------|-------|------------|----------|-----------|---------|-----------------------|-----------|-------------------------------|
|       |                             |       |            |          | Setup Hrs | Run Hrs | Workcenter / Supplier | Lead Time |                               |
| 110   | Small Fab - 1               | 1 pcs | 2/26/19    |          | 0.00      | 1.00    | Small Fab - 1         |           | M L L                         |
|       |                             |       |            |          |           |         | Small Fab - 2         |           |                               |
|       |                             |       |            |          |           |         | Small Fab - 3         |           |                               |
|       |                             |       |            |          |           |         | Small Fab - 4         |           |                               |
|       |                             |       |            |          |           |         | Small Fab - 5         |           |                               |
|       |                             |       |            |          |           |         | Small Fab - 6         |           |                               |
|       |                             |       |            |          |           |         | Small Fab - 7         |           |                               |
| 120   | QC 5                        | 1 pcs | 2/26/19    |          | 0.00      | 0.00    | QC 5 - 10             |           | DAS<br>FEB 26 2019 68<br>9-89 |
|       |                             |       |            |          |           |         | QC 5 - 12             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 17             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 18             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 19             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 22             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 24             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 3              |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 38             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 42             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 43             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 49             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 51             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 58             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 68             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 9              |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 50             |           |                               |
|       |                             |       |            |          |           |         | QC 5 - 30             |           |                               |
| 130   | Packaging 3-1 - Stock - B4B | 1 pcs | 2/26/19    |          | 0.00      | 0.00    | Packaging 3 - 1 - B4B |           | DAS<br>28<br>9-89             |
|       |                             |       |            |          |           |         | Packaging 3 - 2 - B4B |           |                               |
|       |                             |       |            |          |           |         | Packaging 3 - 3 - B4B |           |                               |
|       |                             |       |            |          |           |         | Packaging 3 - 4 - B4B |           |                               |
|       |                             |       |            |          |           |         | Packaging 3 - 5 - B4B |           |                               |
|       |                             |       |            |          |           |         | Packaging 3 - 6 - B4B |           |                               |



Container No: S154619



Part: RBE350A93 - 3200 - 20

Job No: 189772

Serial No/Batch: S154619

Revision: D

Inspector:

Exp Date:

Instructions:

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CANADA  
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Email: sales@dartaero.com  
www.dartaerospace.com

Date: 02/19/19

Plex 1/30/19 11:28 AM Dart.lajeunesse.marie

|                |       |         |           |                 |                        |                       |
|----------------|-------|---------|-----------|-----------------|------------------------|-----------------------|
|                |       |         |           |                 | Packaging 3 - 7 - B4B  |                       |
|                |       |         |           |                 | Packaging 3 - 8 - B4B  |                       |
|                |       |         |           |                 | Packaging 3 - 9 - B4B  |                       |
|                |       |         |           |                 | Packaging 3 - 10 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 11 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 12 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 13 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 14 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 15 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 16 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 17 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 18 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 19 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 20 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 21 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 22 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 23 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 24 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 25 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 26 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 27 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 28 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 29 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 30 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 31 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 32 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 33 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 34 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 35 - B4B |                       |
|                |       |         |           |                 | Packaging 3 - 36 - B4B |                       |
| 140 QC 21 - SA | 1 pcs | 2/26/19 | 0.00 0.00 | QC 21 - SA - 21 | QC 21 - SA - 70        | DAS<br>21 FEB 27 2019 |
|                |       |         |           |                 |                        | 8-28                  |

Part Op 110 - (Small Fab) Pick kit as per DWG.  
 Descriptions: 120 - (QC5- Inspect part completeness to step on W/O)  
 130 - (Identify as per dwg & Stock Location: \_\_\_\_\_)  
 140 - (QC21- Final Inspection - Work Order Release)

## Job BOM

| Part / Item         | Component Name                                 | Quantity     | Operation         | Container |
|---------------------|------------------------------------------------|--------------|-------------------|-----------|
| APP-1030-E          | Case                                           | 1 Ea (1 ea)  | 110-Small Fab - 1 | 5146961   |
| RBE350A93-3200-20-1 | Main Gear Box/Rotor Brake Retaining Nut Wrench | 1 pcs (1 ea) | 110-Small Fab - 1 | 5115438   |
| RBE350A93-3200-20-5 | Bottom Foam use in case APP-1030-E             | 1 pcs (1 ea) | 110-Small Fab - 1 | 5146967   |
| RBE350A93-3200-20-7 | Top Foam use in case APP-1030-E                | 1 pcs (1 ea) | 110-Small Fab - 1 | 5146965   |

## Job Allocations

| Operation         | Component Part      | Required | Inventory | Allocated |
|-------------------|---------------------|----------|-----------|-----------|
| 110-Small Fab - 1 | APP-1030-E          | 1        | 11        | 0         |
|                   | RBE350A93-3200-20-1 | 1        | 21        | 0         |
|                   | RBE350A93-3200-20-5 | 1        | 5         | 0         |
|                   | RBE350A93-3200-20-7 | 1        | 4         | 0         |

## Part Specifications

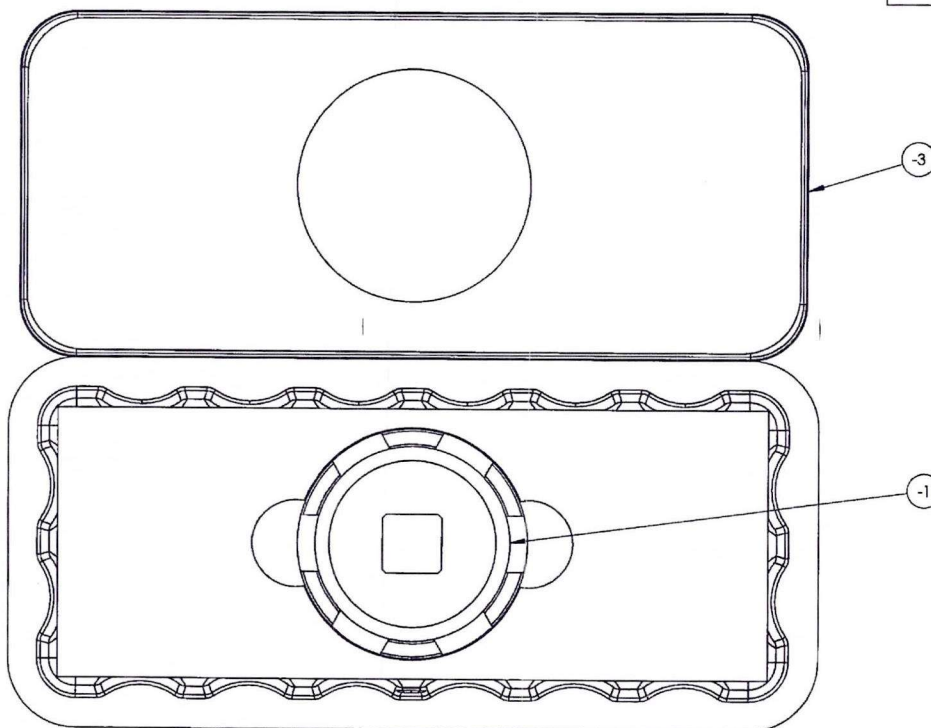
Specifications could not be found.

Plex 1/30/19 11:28 AM Dart.lajeunesse.marie



| ITEM # | QTY | PART #              | TITLE                                | PG |
|--------|-----|---------------------|--------------------------------------|----|
| -1     | 1   | RBE350A93-3200-20-1 | MGB/ROTOR BRAKE RETAINING NUT WRENCH | 2  |
| -3     | 1   | RBE350A93-3200-20-3 | PACKAGING ASSY                       | 3  |

| REV. | DESCRIPTION                                                                                                                                                                                                                     | ECN #  | DATE     | BY  | APPROVED |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------|-----|----------|
| 1    | CHANGED UPPER LIMIT TOLERANCE, ADDED "MADE IN USA"                                                                                                                                                                              | -      | 4/23/09  | RJC | RW       |
| 2    | CHANGED DIMENSION .500+/- .002 TO .485 TO LOOSEN TOLERANCE PER HELIPRODUCTS INFO. ALSO ADDED .10 CHAMFER AND RADIUS FOR BALL LOCK ON 1/2in DRIVE CHANGED FROM CAD YELLOW PLATING TO BLACK OXIDE TO MATCH OTHER TOOLS. PER DAVE. | -      | 9/29/09  | WP  | -        |
| 3    | SCRAPPED ORIGINAL DESIGN FOR THIS DESIGN, PER GABRIEL                                                                                                                                                                           | -      | 3/4/10   | WP  | GE       |
| 3A   | CHD T/N WAS RBEA93-3200-20 IS RBE350A93-3200-20                                                                                                                                                                                 | -      | 10/20/13 | CFS | RW       |
| D    | ITEM 1 BECAME -1, TEMPLATE UPDATED, ITEM -3 PACKAGING ASSY ADDED                                                                                                                                                                | 17-799 | 17.12.21 | VM  | ML       |



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SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 189772 MJS  
1901-30

# **RBE350A93-3200-20 MAIN GEAR BOX/ROTOR BRAKE RETAINING NUT WRENCH**

- NOTES:
- 1) MATERIAL: N/A
  - 2) HEAT TREAT: N/A
  - 3) FINISH: N/A
  - 4) SPEC: N/A
  - 5) BREAK ALL SHARP EDGES: N/A
  - 6) IDENTIFICATION: N/A

|                                                                                                                                                                                                                                                                                 |               |                                                                                                                       |                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------|-------------------|
| <b>DART</b><br>AEROSPACE                                                                                                                                                                                                                                                        |               | Hawkesbury, Ontario, Canada                                                                                           |                   |
| TITLE<br>MAIN GEAR BOX/ROTOR BRAKE RETAINING NUT WRENCH                                                                                                                                                                                                                         |               |                                                                                                                       |                   |
| PART NO.<br>RBE350A93-3200-20                                                                                                                                                                                                                                                   |               | REV<br>D                                                                                                              |                   |
| TOOL NO.<br>RBE350A93-3200-20                                                                                                                                                                                                                                                   |               | UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN INCHES<br>INTERPRET FOR ASSEMBLY<br>DIMENSIONS APPLY AFTER FINISHING |                   |
| INITIALS AND DATE                                                                                                                                                                                                                                                               |               | TOLERANCES:                                                                                                           |                   |
| DESIGNED BY:                                                                                                                                                                                                                                                                    | VM 17/12/21   | XXX ±.008                                                                                                             | FRACTIONS ± 1/8   |
| DRAWN BY:                                                                                                                                                                                                                                                                       | VM 12/21/2017 | .XX ±.01                                                                                                              | ANGLES ±.5°       |
| CHECKED BY:                                                                                                                                                                                                                                                                     | VM 01/02/2018 | X ±.1                                                                                                                 | SURFACE ROUGHNESS |
| MFG REVIEW BY:                                                                                                                                                                                                                                                                  | DD 01/02/2018 | SCALE: NTS                                                                                                            |                   |
| APPROVED BY:                                                                                                                                                                                                                                                                    | ML 01/04/2018 | SHEET 1 OF 6                                                                                                          |                   |
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Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                        |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Sequence #:                                                                                                                       | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | MRB (QSI042)           |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                   | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | Completed By           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Lead hand / Supervisor |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | QC / QA Coordinator    |  |
| <b>Root Cause</b><br><br><div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Preservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |  |                        |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |